

USSN: 10/010,839
Atty. Docket No.: 10141/2
Amdt. dated April 28, 2004
Reply to Office Action of January 28, 2004

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A process for producing an embossed polyolefin film comprising:

(a) providing a cast polyolefin film or an oriented polyolefin film, wherein the film comprises,

(i) a core layer comprising a propylene polymer consisting of an isotactic propylene homopolymer and, optionally, at least one additive selected from the group consisting of antistatic agents, antiblocking agents, lubricants, stabilizers, and hydrocarbon resins,

(ii) an embossable outer layer on a side of said core layer, said embossable outer layer comprising an olefin polymer and having an outward surface on a side of the embossable outer layer opposite a core layer side of the embossable outer layer, and

(iii) an additional outer layer on a side of said core layer opposite to said embossable outer layer, said additional outer layer comprising an olefin polymer and having an another outward surface on a side of the additional outer layer opposite a core layer side of the additional outer layer; and

(b) embossing at least the embossable outer layer of the cast or oriented polyolefin film, creating an embossed surface on the outward surface of the cast or oriented polyolefin film.

Claim 2 (original): The process according to Claim 1, further comprising:

treating at least one of the embossed surface and the another outward surface of the cast or oriented film with at least one of corona and flame discharge treating.

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Claim 3 (currently amended): ~~The process according to Claim 1, further comprising:~~ A process for producing an embossed polyolefin film comprising:

(a) providing a cast polyolefin film or an oriented polyolefin film, wherein the film comprises,

(i) a core layer comprising a propylene polymer,

(ii) an embossable outer layer on a side of said core layer, said embossable outer layer comprising an olefin polymer and having an outward surface on a side of the embossable outer layer opposite a core layer side of the embossable outer layer, and

(iii) an additional outer layer on a side of said core layer opposite to said embossable outer layer, said additional outer layer comprising an olefin polymer and having an another outward surface on a side of the additional outer layer opposite a core layer side of the additional outer layer; and

(b) embossing at least the embossable outer layer of the cast or oriented polyolefin film, creating an embossed surface on the outward surface of the cast or oriented polyolefin film,

wherein the process further comprises metallizing the embossed surface of the cast or oriented film.

Claim 4 (currently amended): ~~The process according to Claim 1, further comprising:~~ A process for producing an embossed polyolefin film comprising:

(a) providing a cast polyolefin film or an oriented polyolefin film, wherein the film comprises,

(i) a core layer comprising a propylene polymer,

(ii) an embossable outer layer on a side of said core layer, said embossable outer layer comprising an olefin polymer and having an outward surface on a side of the embossable outer layer opposite a core layer side of the embossable outer layer, and

(iii) an additional outer layer on a side of said core layer opposite to said embossable outer layer, said additional outer layer comprising an olefin polymer and

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having an another outward surface on a side of the additional outer layer opposite a core layer side of the additional outer layer; and

(b) embossing at least the embossable outer layer of the cast or oriented polyolefin film, creating an embossed surface on the outward surface of the cast or oriented polyolefin film,

wherein the process further comprises heating the outward surface of the embossable outer layer of the cast or oriented film prior to embossing to soften the embossable outer layer.

Claim 5 (currently amended): ~~The process according to Claim 1, further comprising:~~ A process for producing an embossed polyolefin film comprising:

(a) providing a cast polyolefin film or an oriented polyolefin film, wherein the film comprises,

(i) a core layer comprising a propylene polymer,

(ii) an embossable outer layer on a side of said core layer, said embossable outer layer comprising an olefin polymer and having an outward surface on a side of the embossable outer layer opposite a core layer side of the embossable outer layer, and

(iii) an additional outer layer on a side of said core layer opposite to said embossable outer layer, said additional outer layer comprising an olefin polymer and having an another outward surface on a side of the additional outer layer opposite a core layer side of the additional outer layer; and

(b) embossing at least the embossable outer layer of the cast or oriented polyolefin film, creating an embossed surface on the outward surface of the cast or oriented polyolefin film,

wherein the process further comprises hard embossing the cast or oriented film to simultaneously emboss each of the embossable outer layer, the core layer, and the additional outer layer, creating an embossed surface on the outward surface of the embossable outer layer and another embossed surface on the another outward surface of the additional outer layer.

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Claim 6 (original): The process according to Claim 1, wherein embossing at least the embossable outer layer comprises applying a coating to the outward surface of the embossable outer layer in a pattern, creating an embossed surface on the outward surface of the cast or oriented polyolefin film.

Claim 7 (currently amended): ~~The process according to Claim 1, A process for producing an embossed polyolefin film comprising:~~

(a) providing a cast polyolefin film or an oriented polyolefin film, wherein the film comprises,

(i) a core layer comprising a propylene polymer,

(ii) an embossable outer layer on a side of said core layer, said embossable outer layer comprising an olefin polymer and having an outward surface on a side of the embossable outer layer opposite a core layer side of the embossable outer layer, and

(iii) an additional outer layer on a side of said core layer opposite to said embossable outer layer, said additional outer layer comprising an olefin polymer and having an another outward surface on a side of the additional outer layer opposite a core layer side of the additional outer layer; and

(b) embossing at least the embossable outer layer of the cast or oriented polyolefin film, creating an embossed surface on the outward surface of the cast or oriented polyolefin film,

wherein embossing at least the embossable outer layer comprises embossing the oriented polyolefin film after the film exits an orienter and before the film is treated with at least one of corona and flame discharge treating.

Claim 8 (original): The process according to Claim 7, wherein embossing at least the embossable outer layer includes contacting the film with a preheat roll and an embossing roll.

Claim 9 (original): The process according to Claim 1, further comprising:

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selecting the olefin polymer of the embossed outer layer from the group consisting of an ethylene-propylene-butylene (EPB) terpolymer and an ethylene-propylene (EP) copolymer.

Claim 10 (original): The process according to Claim 1, further comprising:
providing a high density polyethylene (HDPE) for the olefin polymer of the additional outer layer.

Claim 11 (canceled).

Claim 12 (currently amended): ~~The process according to Claim 1, A process for producing an embossed polyolefin film comprising:~~

(a) providing a cast polyolefin film or an oriented polyolefin film, wherein the film comprises,

(i) a core layer comprising a propylene polymer,

(ii) an embossable outer layer on a side of said core layer, said embossable outer layer comprising an olefin polymer and having an outward surface on a side of the embossable outer layer opposite a core layer side of the embossable outer layer, and

(iii) an additional outer layer on a side of said core layer opposite to said embossable outer layer, said additional outer layer comprising an olefin polymer and having an another outward surface on a side of the additional outer layer opposite a core layer side of the additional outer layer; and

(b) embossing at least the embossable outer layer of the cast or oriented polyolefin film, creating an embossed surface on the outward surface of the cast or oriented polyolefin film,

wherein embossing at least the embossable outer layer comprises embossing the cast polyolefin film prior to treating the film with at least one of corona and flame discharge treating.

Claim 13 (original): The process according to Claim 12, wherein embossing at least the embossable outer layer includes contacting the film with a preheat roll and an embossing roll.

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Claim 14 (currently amended): A process for producing an embossed polyolefin film comprising:

(a) providing a cast polyolefin film or an oriented polyolefin film, wherein the film comprises,

(i) a core layer comprising a propylene polymer,

(ii) an embossable outer layer on one side of said core layer, said embossable outer layer comprising an olefin polymer and having an outward surface on a side of the embossable outer layer opposite a core layer side of the embossable outer layer, and

~~(III)~~ (iii) an additional outer layer on a side of said core layer opposite to said embossable outer layer, said additional outer layer comprising an olefin polymer and having an another outward surface on a side of the additional outer layer opposite a core layer side of the additional outer layer;

(b) heating the embossable outer layer of the cast or oriented film;

(c) embossing at least the embossable outer layer of the cast or oriented polyolefin film, forming an embossed surface on the outward surface of the cast or oriented polyolefin film;

(d) treating at least one of the embossed surface and the another outward surface of the cast or oriented film with at least one of corona or flame discharge treating; and

(e) slitting the treated film with a slitter machine.

Claim 15 (original): The process according to Claim 14, further comprising:
metallizing the embossed surface of the film.

Claim 16 (original): The process according to Claim 14, wherein slitting the treated film further comprises:

unwinding a master roll of oriented or cast polyolefin film;

cutting the film unwound from the master roll, into at least one narrower roll of film ; and

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rewinding each of the at least one narrower roll of film into a rewound narrower roll of film.

Claim 17 (original): The process according to Claim 16, further comprising:

contacting the embossable outer layer of the film unwound from the master roll with at least one heated roll prior to rewinding each of the at least one narrower roll of film, to heat the film; and

contacting the outward surface of the embossable outer layer of the heated film unwound from the master roll with an embossing roll.

Claim 18 (original): The process according to Claim 17, wherein the film is corona or flame treated on the slitter machine, before rewinding each of the at least one narrower roll of film into a rewound narrower roll of film.

Claim 19 (original): The process according to Claim 14, further comprising:

selecting the olefin polymer of the embossed outer layer from the group consisting of an ethylene-propylene-butylene (EPB) terpolymer and an ethylene-propylene (EP) copolymer.

Claim 20 (original): The process according to Claim 14, further comprising:

providing a high density polyethylene (HDPE) for the olefin polymer of the additional outer layer.

Claim 21 (original): The process according to Claim 14, further comprising:

providing a core layer consisting of an isotactic propylene copolymer and at least one additive selected from the group consisting of antistatic agents, antiblocking agents, lubricants, stabilizers, and hydrocarbon resins.

Claim 22 (original): The process according to Claim 14, further comprising:

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heating the embossable outer layer to a temperature of between about 230°F and about 280°F; and

soft embossing the film by applying an embossing force of about 200 psi to the heated embossable outer layer.